

OPINION 106

THE TYPE OF *Oestrus* LINN., 1758, IS *O. ovis*.

SUMMARY.—The type of *Oestrus* Linn., 1758, is *O. ovis* (Art. 30g). Latreille's designation of *Oestrus equi* Fabr. as type of *Oestrus* is not valid (Art. 30g). The following five names of dipterous genera are hereby placed in the Official List of Generic Names: *Cephenemyia* (type *trompe*), *Gasterophilus* (type *equi* of Clark, synonym of *intestinalis* de Geer), *Hypoderma* (type *bovis*), *Oedemagena* (type *tarandi*), and *Oestrus* (type *ovis*).

STATEMENT OF CASE.—Professor W. S. Patton, Liverpool School of Tropical Medicine, has submitted the following case:

I am writing to request you to place before the Commission on Zoological Nomenclature data on which an application is based for Suspension of the Rules of Priority on the following cases: *Oestrus* L., 1758 (*Gasterophilus* Leach, 1817, nec *Gasterophilus* auct.) with *Oestrus intestinalis* de Geer as type, and to place *Gasterophilus* Leach, 1817, in the Official List of Generic Names with *G. intestinalis* as type; *Cephalemyia* Latr., 1810, with *C. ovis* L. as type, and to place *Oestrus* L. in the Official List of Generic Names with *O. ovis* as type.

The facts connected with the nomenclature of the horse bots and warble flies are briefly as follows: In 1758 Linnaeus founded the genus *Oestrus* including in it the following five species, the first being the type of the genus.

1. *Oestrus bovis* [type host *Bos taurus*].
2. *Oestrus tarandi* [type host *Cervus tarandus*].
3. *Oestrus nasalis* [type host *Equus caballus*].
4. *Oestrus haemorrhoidalis* [type host *Equus caballus*].
5. *Oestrus ovis* [type host *Ovis aries*].

It is quite clear from the description of *Oestrus bovis* that Linnaeus meant the common horse bot which has for more than a century been known as *Gasterophilus intestinalis* de Geer (*equi* Clark), and not the equally familiar warble fly of cattle, *Hypoderma bovis*. In 1818 Latreille revised these species and erected four genera for the reception of the Linnaean species as follows:

1. *Hypoderma* for *Oestrus bovis*.
2. *Cephalemyia* for *Oestrus ovis*.
3. *Oedemagena* for *Oestrus tarandi*.
4. *Cephenemyia* for *Oestrus nasalis*.

In 1817 Leach erected the genus *Gasterophilus* (nec *Gasterophilus* auct.) with *bovis* L. (*equi* Clark) as type, and included in it *haemorrhoidalis* L. Clark later clearly recognized Linnaeus's original mistake, and pointed out that many of the older authors used the name *bovis* in this erroneous sense.

Without going further into this extremely involved question of nomenclature, it is clear that if the Law of Priority is to be strictly adhered to, the horse bots should be placed in the genus *Oestrus* and the common species known specifically as *bovis*. The results would then be as follows:

1. It would be necessary to erect a new genus for the warble flies of cattle and goats, flies now placed in the genus *Hypoderma*.

2. The horse bots would have to be placed in the genus *Oestrus* (synonym *Gasterophilus*) with *bovis* as type.

3. The ruminant nasal bots would have to be placed in the genus *Cephalemyia* with *ovis* as type.

These changes have already been partially adopted in the "Review of Applied Entomology," Series B, Medical and Veterinary, and if you will refer to recent summaries of papers of these flies in this Review, you will see that the horse bots are placed in the genus *Oestrus* and the nasal bots in the genus *Cephalemyia*. This change has already been accepted as authoritative by some writers.

The strict application of the Rule of Priority causing such a transfer will result in the utmost confusion involving generic, subfamily, and family names and designation in both veterinary and human medicine. As a teacher of medical and veterinary entomology I am strongly of the opinion that Suspension of the Rules, thereby validating accepted nomenclature, which has been in consistent use for more than a century in veterinary medicine, is highly desirable.

I am aware that *Oestrus* L., 1758, type *ovis* was suggested for adoption in the Official List by the Commission in 1913, but I am not aware as to whether it has been formally adopted.

The documents were submitted by the Secretary to the Committee on Nomenclature of the Entomological Society of Washington for special study and this Committee has presented two reports (April 11, 1927, and May 12, 1928), summarized as follows:

The genus *Oestrus* was described by Linnaeus in 1758 (Syst. Nat., 10th ed., p. 584) and included the following five species:

1. *Oestrus bovis*.
2. *Oestrus tarandi*.
3. *Oestrus nasalis*.
4. *Oestrus haemorrhoidalis*.
5. *Oestrus ovis*.

The first species, *bovis*, was composite, as the original description described the adult which is now known as *Gasterophilus intestinalis* de Geer, while the larva and habits were those common to the species now known as *Hypoderma bovis*. None of the species was designated as type by the original describer.

In 1810 (Consid. Générales, p. 444) Latreille named as type of *Oestrus*, "*Oestrus equi* Fabr.," 1787.

In 1818 (Nouv. Dict. d'Hist. nat., vol. 23, pp. 271-274) Latreille proposed four genera, removing four of the species originally included in the genus *Oestrus*. The first species, *bovis*, as applied to the larva, was referred to *Hypoderma*; the second species, *tarandi*, was made the type of *Oedemagena*; the third species, *nasalis*, was not mentioned by name, but *trompe* Fabr., which is the same as *nasalis*, was made the type of the genus *Cephenemyia*; and the fifth species, *ovis*, was made the type of the genus *Cephalemyia*. In this work Latreille restricted the genus *Oestrus* to *equi* Fabr. and *haemorrhoidalis*, the fourth species.

Apparently writers have not followed Latreille, and in 1826 Curtis (Brit. Ent., vol. 3, p. 106) designated in a very definite manner, by the use of the words "type of the genus," *Oestrus ovis* as the type of *Oestrus*.

Since 1826 dipterologists have generally followed Curtis' designation and have considered the nasal bots of sheep as belonging to the genus *Oestrus*, the warble flies of cattle and goats as belonging to the genus *Hypoderma*, and the horse bot flies as belonging to the genus *Gasterophilus*, a genus proposed by Leach in 1817. However, in recent years some workers have considered that Latreille's designation of 1810 made it necessary to use the name *Oestrus* for the horse bots and have resurrected the name *Cephalemyia* for the nasal bots of sheep.

This committee has examined into the literature and finds that Clark was not the first author to propose the name *equi*. The name *equi* was first proposed by Fabricius in 1787 (Mantissa Insectorum, vol. 2, p. 321) as follows:

- "4. O. alis immaculatis, thorace ferrugineo, abdomine nigro: pilis flavis.
 a. *Oestrus nasalis* Sp. Ins. 2. 399. 4.
 b. *Oestrus haemorrhoidalis* Sp. Ins. 2. 399. 5.
 a. et b. merae varietates nullo modo specie sed tantum loco diversae."

This same description and understanding of *equi* was used by Fabricius in *Entomologia Systematica*, vol. 4, 1794, p. 232.

Clark in 1797 (*Trans. Linn. Soc.*, vol. 3, pp. 289-328) considers *Oestrus equi* Fabr. of the *Syst. Ent.* to be the same as *Oestrus veterinus*, and *Oestrus equi* var. b. as a synonym of *Oestrus haemorrhoidalis*; and very definitely points out that *Oestrus bovis* Linn. is a composite species, the adult described being a species which is a common horse bot and for which he uses the name *equi*, and the larva and habits being those of the common warble flies, for which he uses the name *bovis*. Dipterists have apparently followed Clark's usage and many of them have credited the name *equi* to Clark rather than to Fabricius. It would seem, however, that this is untenable, and that the name *equi* Clark must be considered as a homonym and the species commonly known as *equi* should have a different name. The name *intestinalis* de Geer is available. *Oestrus intestinalis* de Geer was described from the immature stages, but recently has been accepted by certain workers as the proper name for *equi*.

Students who have claimed that Latreille in 1810 designated the type of *Oestrus* have undoubtedly been in error, because the name *equi* was not included in the original account of the genus either as a name of a valid species or as one of the components of a composite species. From the information available—namely, that which has been presented by Dr. Patton and the literature which has been examined—the committee is of the opinion that the first valid designation for the type of the genus *Oestrus* is that of Curtis in 1826, when he named *Oestrus ovis* as the type.

Even admitting that the species *equi* Fabr., designated type of *Oestrus* by Latreille, 1810, was originally included within the genus by Linnaeus—and this can be done only because Fabricius' *equi* is a new name for *nasalis* and *haemorrhoidalis*—the designation by Latreille would not hold, for the *equi* he cited is a composite of two of the forms originally included and the designation is equivalent to citing two of the originally included species as type. Since only one of the species originally included can be selected as type, regardless of subjective synonymy, the 1810 designation of Latreille does not hold.

According to our findings it is not necessary to set aside any of the Rules or Opinions of the International Commission or to suspend the Law of Priority. Summarizing briefly the findings, we have the following:

Ocstrus Linn., 1758, type *ovis* by designation of Curtis, 1826. (Westwood, 1840 [Intr. Mod. Class. Ins., vol. 2, p. 154] did not concur but designated *Ocstrus bovis* Fabr. as type. This selection is untenable, as Curtis' has priority.)

Syn. *Cephalemia* Latr., 1818, type *ovis* (Monobasic-Isogenotypic). (Westwood, 1840, also uses *ovis* as type of *Cephalemia*.)

Gasterophilus Leach, 1818,¹ proposed for three species, *equi* Clark, *haemorrhoidalis* Linn., and *clarkii* n. sp. *Equi* was designated as the type by Curtis, 1826 (p. 146). (Westwood, 1840, used the same species as type.)

Hypoderma Latr., 1818, type *bovis* Linn. as restricted by Clark.

Cephenemyia Latr., 1818, type (*Ocstrus trompe* Fabr. =) *O. nasalis* Linn. (Monobasic).

Oedemagena Latr., 1818, type *tarandi* L. (Monobasic).

It is recommended that the foregoing five generic names, with types as designated, be placed in the Official List of Generic Names.

Opinion written by S. A. Rohwer. Concurred in by Drs. J. M. Aldrich, E. A. Chapin, A. C. Baker and Carl Heinrich.

DISCUSSION BY SECRETARY.—The Secretary has reverified Linn. (1758), and Latr. (1810 and 1818) which are the most important papers involving the type designations of *Ocstrus* prior to Curtis (1826). He reaches the same conclusion in regard to the invalidity of the designation by Latreille.

On basis of the study by Rohwer and his colleagues, the Secretary recommends that the Commission adopt as its opinion the following:

1. The type of *Ocstrus* Linn., 1758a, 584, is *Ocstrus ovis*, as definitely designated (Art. 30g) by Curtis, 1826.
2. Latreille's (1810) designation of *Ocstrus equi* as type is not valid, as this (*equi*) contained two of the original species, hence was not designation of one original species as type.

Further the Secretary recommends the adoption of the proposal by Rohwer and his colleagues that the following five names be placed in the Official List of Generic Names:

Cephenemyia Latr., 1818, Nouv. Diet. Hist. nat., vol. 23, 271, mt. *trompe* Fabr., syn. of *Ocstrus nasalis* Linn., 1758a.

¹The usual reference to this genus is 1817. Although the paper in which the generic name was proposed was read before the Wernerian Natural History Society on April 6, 1811, it was published in volume 2 of the Memoirs of this society, which is dated 1818, and we cannot find any indication in the volume itself to prove that it was published in 1817. It is certain that Leach's paper was published prior to Latreille's because Latreille in his 1818 paper refers to *Gasterophilus* Leach.

Gasterophilus Leach, 1817, Brewster's Edin. Encycl., vol. 12 (1), 162; tsd. (1826; 1840; 1910; 1915) *equi* of Clark, 1797 [not Fabr., 1787] syn. of *intestinalis* de Geer, 1776.

Hypoderma Latr., 1818, Nouv. Dict. Hist. nat., vol. 23, Sept., 272, mt. *bovis* [not *Hypoderma* Geoffr., 1828, Dict. Class. Hist. nat., vol. 14, Sept. or Oct., 707, mammal].

Oedemagena Latr., 1818, Nouv. Dict. Hist. nat., vol. 23, 272, mt. *Oestrus tarandi* Linn., 1758a.

Oestrus Linn., 1758a, 584; tsd. (1826; 1910; 1915) *ovis*. Absolute syn. is *Cephalemyia* Latr., 1818, mt. *ovis*.

Opinion prepared by Dr. Rohwer and colleagues.

Opinion concurred in by thirteen (13) Commissioners: Apstein, Bather, Chapman, Handlirsch, Hartert, Horvath, Ishikawa, Jordan (D. S.), Jordan (K.), Kolbe, Stiles, Stone, Warren.

Opinion dissented from by no Commissioner.

Not voting, four (4) Commissioners: Dabbene, Loennberg, Neveu-Lemaire, Stejneger.